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THE PRIMITIVE CHILD.

BY DR. LOUIS ROBINSON.

ALTHOUGH the Darwinian doctrine of human descent has now been accepted for the best part of a generation, we have as yet done little in applying it in interpreting the many records of the past which are found in our bodies. The logical tactics necessarily adopted by the pioneers of the movement are to some extent accountable for subsequent slow progress. While the main question was in dispute all advocates of the evolution theory were striving to establish the principle. In doing this it was obviously necessary to use the inductive method. Facts were collected and examined for the sake of observing their general tendency, and were of interest, or the reverse, according as they threw light upon the hypothetical law. The *modus operandi* by which Darwin and Wallace achieved their first triumphs has become somewhat of a pious tradition among their disciples, and has been too slavishly adhered to by many who have essayed to rival their exploits. But it is evident that the methods resorted to for purposes of conquest are by no means those which render a new territory of permanent value to the captors. When the fight is over and the victory won, progress is not aided by mangling the carcasses slain, or by marking time on the field of battle. Now that the principles of evolution have taken their place forever among the axioms of science, we must resort to deductive tactics if we hope to enjoy the fruits of victory.

We must learn to look at natural phenomena through evolutionary glasses, not as people read the prints at an optician's —where the lenses are the chief objects of interest and the characters go for nothing except as tests of the media—but for the

sake of seeing their meaning more clearly. It is wonderful, when this is done, how many of the most dull and trivial facts of every-day experience become alive with interest. The new philosophy is found to possess a transmuting power which changes the very dust of the earth into golden grains of knowledge.

Let us glance at some of the most familiar characteristics of early childhood, and see what they reveal to us when viewed in this way. If the laws of variation and the survival of the fittest account for peculiarities of structure and habit among other animals, they are equally applicable here. Each trait, whether mental or bodily, is itself a record of the circumstances which brought it into being. As the geologist has learned to interpret the strata, and to reconstruct from what he observes there successive chapters of the earth's strange history, so it should be possible for the physiologist to decipher the writing of the past which is manifest in every detail of the human organism.

In several articles published in *The Nineteenth Century*, the *Deutsche Revue*, and elsewhere, I have endeavored to point out certain evidences of descent from a pithecid arboreal ancestor which are still visible in the modern infant. On the present occasion no attempt will be made—except incidentally—to carry the story beyond the earliest human period. I hope to show, however, that there is good physiological ground for believing that the epoch of utter savagery lasted an enormous time, and that certain latter-day attempts to curtail the paleolithic age to something under a hundred thousand years receive no support from the bodies of even the most strenuous supporters of such a view.

Generally speaking—as the study of embryology would lead us to expect—young animals resemble their less specialized ancestors more than do adults; and hence, in most respects, the babe possesses more ape-like characteristics than its parents. But to this rule there are some notable exceptions; and exceptional phenomena are always worthy of attention in such an inquiry as the present, because they are sure tokens of some phase of environment which has exercised a special influence in the course of evolutionary development.

With one of these exceptional and distinctly human atavistic peculiarities we will commence our survey.

The most obvious fact about a normal healthy infant which strikes a casual student of this section of the animal kingdom is

its rotundity of outline. Who would have thought that the fat which cushions a baby's body told one of the most tragic tales of human suffering which it is possible to imagine? Yet this is the opinion to which we are driven by a brief examination of the facts, in the light of evolutionary law. All young and helpless monkeys are very light and slim, for if they were not so their parents would be unable to carry them when climbing and leaping among the branches. During the arboreal stage of man's existence, his offspring must have conformed to the same type; and since the condition had been imperative among all members of the species throughout an immense epoch, the infants of the earliest earth-walking men would not differ from their ancestors in this respect.

How, then, has the human babe, from being originally a spare animal with no superfluous flesh, become metamorphosed into that obese and ponderous creature with which the least scientific of my readers is familiar? So pronounced and universal a structural peculiarity can only be accounted for, according to Darwinian principles, on the ground that, at some time, it aided in preserving the race from extinction. The causes to which it is attributable must also have been sufficient to outweigh certain obvious disadvantages of the condition, for it is plain that, among wandering savages, who had to travel far in search of food and who were continually liable to attacks of enemies, a helpless and heavy child would be a very hampering burden. Even in modern times, as every physician knows, a fat child is more likely to succumb in certain common infantile ailments than a thin one.

From the fact that the peculiarity is common to the babes of the most diverse races of mankind, it is evident that it arose (in common with all other distinctively human characteristics) before the species became divided into distinct races and distributed over the earth. But this, as the primitive stone weapons found both in the old and new worlds assert, takes us back to a period when the most cultured tribes of men were savages such as the modern Fuegians and Australian blacks. Having got thus far it becomes necessary to propound two questions in order to solve the main problem. These are—(1st): What is the chief physiological use of accumulations of fat? and (2d): What were the special conditions of life among low-grade barbarians which rendered such accumulation necessary to infants?

Animals which periodically lay on large quantities of adipose tissue either hibernate, like the bear, the bat, and the dormouse; or have to tide over times when food is scarce from drought or cold weather as in the case of the hog, the bison, or the camel. In these creatures the fat accumulated when food is plentiful is plainly a store of nutriment laid up for future use. Arctic animals, such as the seal, live under conditions which have nothing in common with those of primordial man, who distinctly belonged to the tropic and temperate parts of the globe. Although it is probable that among northern nations the naked babe has found its adipose covering useful in keeping out the cold, he certainly did not, in the first place, develop it by way of an overcoat, after the fashion of the whale and the walrus.

Although primitive man did not hibernate, and was probably versatile enough to find food in all seasons of the year, he was, like all modern savages who live by the chase, liable to frequently recurring famines. If game was plentiful the tribe revelled in abundance ; but when the hunters were unsuccessful, roots and skin clothing were the chief articles in the *menu*. Now, it is obvious that infantile gums would make but poor play with such tough diet ; and at the same time, the babe at the breast would find its usual nutriment almost entirely cut off. In order to tide over these periods of scarcity it was therefore necessary that the primitive child should imitate the provident habits of the bear and the dormouse. By waxing fat in times of plenty, he was able to fall back on his own resources during "the winter of his discontent," when his parents were unable, or unwilling, to provide him with food. We must remember that, even now, it is constantly an open question among the lowest races whether they will be able to hold out during an enforced fast until food can be obtained, and that the mortality of the young and weak from starvation is very great. Not only were our own ancestors similarly circumstanced, but they must have been subject to like evolutionary influences from the tertiary period until comparatively recent times. The severity of the stress to which they were subjected is proved by the fact that the modern healthy babe is invariably plump, whereas the archaic babe must have been lean and spare like his predecessors, whose nursery was among the tree-tops. The difference has been brought about by the constant elimination, by means of death from want, of thousands upon thousands of infants

of the primitive simian type. In fact only those children who varied in the direction which the conditions of a precarious savage life rendered necessary survived and left offspring.

Hence it is scarcely an exaggeration to say that the typical rotund baby, whose elephantine limbs are exhibited by the proud mother to all her friends and relatives, is about as melancholy a monument of human misery as it is possible to imagine !

These conclusions are backed up by other phenomena familiar to all who have carefully observed the habits of little children. The universal tendency exhibited by infants to pick up small objects of all kinds and put them into their mouths is not, in a modern nursery, considered conducive to their welfare. Yet the universal character of the habit compels one to believe that at one time it was an important factor in determining survivorship. It is astonishing what a thoroughly robust and healthy infant will swallow with impunity ; and in all probability the crawling cave-dweller had a stomach which was much more tolerant than those possessed by his modern descendants. In times of stress, when the hunters of the starving clan were scouring the country for prey, and the squaws were digging for roots in the forest, he busied himself in a profitable manner among the abundant debris on the floor of the cave, or experimented gastronomically with grubs, caterpillars, and other small deer, as he crept after his mother among the grass.

Although many of the objects ingested in this hap-hazard and impartial fashion would be of doubtful dietetic value, it is by no means a far-fetched hypothesis that such a foraging instinct told for a good deal when starvation was imminent. Nor, probably, did he make so many fatal mistakes as many people would imagine. The modern view of a baby, current among nurses and mothers, is that it is an unmitigated fool with strong suicidal tendencies. The results of the investigations in infant psychology carried on by my colleague in this fascinating branch of the study of human attributes, Professor Preyer, of Wiesbaden, show that the baby has been grossly slandered and misjudged through the fond arrogance of domestic philosophers. No doubt many of the pristine instincts of this (normally) intelligent animal have been blunted and warped by imprisonment in stuffy nurseries or smothered by inordinate swaddling. But in primeval times the infant with the least aptitude for locomotion had wits sufficient

for his wants, and inherited instincts of self-preservation as trustworthy as those of the crawling puppy or the fledgling bird.

Another common infantile attribute not only confirms the above conclusions as to the crucial environment of the primitive child, but also suggests a grave indictment against the paleolithic parent. I allude to the fact that the majority of our little ones are pleasing to the eye and have inherent winning manners. Their style of beauty is essentially human, and has evidently been evolved since pithecid standards went out of fashion. I have seen many baby monkeys, and freely acknowledge that they have a certain prettiness of their own, but it is of a distinctly animal type, like that of kittens and ducklings. We do not regard a baby which looks like a young ape as pleasing to look upon, any more than we should esteem one pretty which bore a monstrous resemblance to a duck. Infantile beauty has therefore not come down from arboreal times by the unbroken chain of inheritance, as seems to be the case with the prehensile power in a baby's hands. It was a new departure, and must be accounted for by post-arboreal evolutionary agencies.

Now it is obviously impossible on the present occasion to discuss the whole question of physiological æsthetics. Let it suffice to say that the Darwinian explanation of our innate standards of human beauty is bound up with the theory of sexual selection, and that our ideals, as regards childhood's charms are nearly akin to our ideals of what constitutes beauty in women. But although this may broadly account for the *criteria*, it does not explain how it has come about that most children are pretty. Inheritance may, of course, have something to do with it, and here sexual selection would be distinctly an indirect factor. Yet a pretty child often has a plain mother and father, and itself becomes physically unattractive when it grows up. In the case of the animals already mentioned, and of many others, the beauty of the young is not a reflection of what is most pleasing in their appearance in after-life, but is often the very antithesis of it. We may conclude, therefore, that infantile beauty is to a great extent a thing by itself, and that it required selective agencies of a special character for its creation. Nor need we go far afield to see the process still going on—or perhaps it would be more correct to say, the evolutionary machinery by which such a result might be brought about if we were again exposed to the

vicissitudes of savage life. Who does not feel more kindly disposed towards a pretty, engaging child than towards an ugly one? Where beauty is present we easily bestow affection, and that affection readily and naturally displays itself in caresses and gifts. In most schools, and in too many nurseries, there is one favorite child, a Benjamin, who—for no superior merit—gets a Benjamin's share of the porridge. If one could get a composite photograph of all and specially petted children, who doubts that the resulting picture would be prettier than one obtained from a like number of children selected by lot? “Kissing goes by favor,” and favor is the eternal portion of comeliness.

Among civilized surroundings infantile prettiness, like the indiscriminate voracity already spoken of, is probably rather eliminative than conservative. It leads to the physical and moral degeneration which accompanies a plethora of candy and free-will. But, granting a state of society in which it was often necessary to sacrifice several members of every family of children, can it be doubted that the “flower of the flock” (in the parent's estimation) would stand a better chance of surviving than his plainer brothers and sisters? We have only to turn to accounts of modern savages to find that constantly, in times of war or famine, whole families perish with the exception of one or two individuals. In the case of a night attack on the wigwams probably only those helpless little ones would survive who were caught up by the parents in their flight from the merciless enemy; and under such circumstances a Jacob would have a better chance than an Esau. When the ranks of the clan were being thinned by want, the type of child which is now the spoiled darling of the nursery would “score” in any distribution of such food as might be obtainable. Moreover, among primitive races parental love is much more a matter of instinctive animal liking than among enlightened and civilized people whose conduct is influenced by abstract standards of duty; and therefore those outward qualities in children which still awake instinctive preferences within us were throughout the vast epoch of ancestral barbarism rendered all the more powerful in determining the victors in the struggle for existence.

Although, considering his general circumstances, many allowances must be made for the moral shortcomings of early man, these are not the only facts which compel one to adopt the view

that he was by no means an ideal parent. Having made out a *prima-facie* case of gross favoritism against him, the next infantile characteristic which we shall examine accuses him (and, I fear, we must add *her*) of habitual indifference to infantile wants. I allude to the astonishing vocal capabilities of the average baby. As far as I can at present see, nothing can account for this tremendous natural phenomenon but a hypothesis that parental duties were terribly neglected in primeval times, and that sharp coercive measures were necessary to keep our distant ancestors reminded of their obligations to their offspring. Let the latter-day father, whose nights are broken by persistent and ear-piercing objurgations from the cradle, transfer his wrath from the vociferous but innocent protestant to his remote progenitor, who was, undoubtedly, the *fons et origo mali*. Nature expends no creative capital unless to meet an actual need, and then never goes beyond the exact point which is necessary to accomplish the end in view. That any baby can squall for many hours at a stretch sufficiently loudly to make itself heard over a considerable area is a fact which is extremely difficult to explain in a manner favorable to the domestic reputation of early man. It also suggests several other inferences as to the life habits of the pristine tribes. All young creatures, such as calves and fawns, which are hidden by their dams while the latter wander in search of food, will, unless actually hungry, remain silent for hours together. Where both parent and offspring depend on concealment in evading their foes, a like restraint is habitually put upon the vocal apparatus. The absolute indifference to external conditions shown by a baby in giving free vent to his complaints suggests that man was never by habit a solitary animal who trusted chiefly to concealment. If this were the case, the family would have been constantly betrayed to prowling enemies by the crying of its irrepressible youngest member. If, on the other hand, prehistoric men dwelt in armed communities for the sake of defence, it is obvious that the nocturnal squalling of infants might contribute to vigilance, and so assist the tribal sentinels in their duty.

It would not be fair to leave this subject without remarking that the same evidence proves that, when sufficiently stimulated by the coercive measures above alluded to, the primitive parent accepted the situation like his modern representative. For it is

plain, from the universal distribution of this infantile gift, and from the indomitable persistence with which it is exercised, that it has accomplished some useful purpose in years gone by. Babies must generally have got their own way in the end in the past, or they would not show such readiness nowadays to stake all they are worth in attempts to subdue every one around them to abject serfdom.

The fear of strangers exhibited by young children who have experienced nothing but the utmost kindness from every human being with whom they have been brought in contact is a phenomenon which is also only explicable on evolutionary grounds. When we consider that among small clans of barbarians who live by hunting, the words "stranger" and "enemy" are practically synonymous, it is not difficult to understand the development of an instinctive distrust of a new face. In the incessant inter-tribal strife which invariably accompanies such a state of society, the raids of hostile war parties against camps and villages must be of frequent occurrence. Travellers in Africa tell us that as a rule native children vanish into the huts or bushes as soon as the white man is seen approaching. When war is waged in the merciless manner common among savages, a child who always flees at once from a stranger, or who turns to its mother so that she can pick it up instantly and dash into hiding, would stand a much better chance of growing up than one of a more confiding disposition. In the course of many generations such an instinct would become more and more confirmed; for of course those who had escaped death by its exercise during their early years would tend to produce offspring who inherited the same peculiarity. We know, from the distribution of the roughest stone implements, that a state of affairs in which most of the conditions prevailed which are now operative among the aborigines in the wilds of Africa and Australia, continued in Europe quite long enough for the habit to have been acquired in this way.

A fear of being left alone in the dark is almost universal among little children, and yet, in ninety-nine cases out of a hundred it is purely instinctive and is not founded on personal experience. In civilized countries there is no greater danger to child-life in the dark than in the daylight. The feeling of fear generally lacks definition as much as it lacks foundation, but accompanied with it is an imagination preternaturally alert, which confers

frightful shapes and qualities upon all dimly seen objects. Fear is obviously one of the most effective conservative forces in nature. It is the moral basis of the innumerable shifts of the weak in escaping from danger of all kinds. Wherever we find a special instinct of self-preservation we may at once conclude that at some stage of racial existence it was exactly commensurate with the perils which called it into being. As I have remarked before, nature develops no new organ or quality except to meet a vital want, and has a way of adapting means to ends which does not allow of the least surplus. An organism is as exactly adjusted to its environment as a casting in metal or plaster to the mould which gave it shape. The apparent disproportion between means and ends which we so often see in nature is due to the fact that, while environment changes from age to age, peculiarities of structure or habit which have once become thoroughly established are often perpetuated for an indefinite number of generations. A mould may be of unstable sand, but the casting of stubborn brass which retains its shape for all time. Evolution has reversed the philosophic platitudes as to the evanescence of the flesh. Organized bioplasm renews its youth like the phœnix, and its attributes outlast their mundane causes.

The unreasoning night-fears of infancy may therefore be read as a record of past circumstances which at one time rendered them necessary in preserving life. When the cave bear and that grisly nondescript the sabre-toothed tiger (*machairodus latidens*) were contemporary with the English troglodyte, and when hyenas which could crunch up the shin-bone of an ox like a stick of macaroni were his next-door neighbors, it was obviously indiscreet for a defenceless human being to wander abroad after nightfall. The child which did not fear the darkness as instinctively as a newly hatched partridge fears a hawk, proved himself one of the unfit, and could have had but a poor chance of reaching maturity. It has doubtless been through the continual weeding out of such, that this characteristic of early life became as prevalent as we find it to-day; and when we consider the extraordinary conservatism which marks the policy of the nervous system, it seems probable that, like a hundred other obsolete instincts, this relic of the paleolithic age will outlast modern civilization.

In connection with this subject we may consider the remark-

able terror which is exhibited by most children of under two years old on seeing anything which resembles a wild beast. This is quite independent of the most elementary knowledge of natural history, and still more so of any acquired information as to possible danger from such a source. I have experimented on my own little ones, and on others, in order to find out what crawling shape they deemed most frightful. This, I thought, might give one a hint of the most prevalent source of danger to children in that prehistoric epoch during which human nature was being slowly shaped and moulded out of the beast-nature of The Thing of the Tree. My *modus operandi* consisted of covering myself (always in the full sight of the child) with a shaggy skin, and then imitating the actions and voices of various dangerous creatures such as the wolf, lion, bear, or dog. These experiments were followed up by showing the children the stuffed specimens of such beasts in the Kensington Natural History Museum. Although they had no knowledge, either practical or otherwise, of the formidable character of animals of such a kind (and also in spite of the fact that the fraud was a patent one), the children all exhibited great agitation and distress whenever the *pseudo* bear or wolf drew near; so much so, in fact, that the "new game" had to be speedily relinquished in most instances.

Of course any results so obtained can be nothing more than approximate hints as to the special eliminative agencies which were instrumental in evolving this strongly marked protective instinct. It seemed to me, however, that anything in the shape of a bear was especially obnoxious, and this opinion was confirmed when I watched the manner in which my little playmates afterwards approached the various stuffed animals in the museum. It is a suggestive fact that in the oldest known cave deposits, such as the lower *breccia* in Kent's Cavern, in Devonshire, the bones and teeth of the bear are found associated with stone implements of the archaic type, but that the lion, tiger, hyena, and other formidable beasts of prey, which were contemporary with man in Europe, did not appear until a much later period. It would be interesting to ascertain whether children of races inhabiting tropical regions have special instinctive aversions corresponding to the historically prevalent carnivora of their respective countries. But, while all such details must, however interesting, be purely conjectural, there can be no doubt whatever that most modern

children retain a purely instinctive and inherent terror of the animals which, unless our ideas of primeval environment are altogether wide of the mark, must have devoured many thousands of our collateral ancestors in their tender youth.

The jealousy which so many little children display, especially when the possession of some favorite dainty is in question, is another proof that, in the hard times to which allusion has been made, it was necessary for each to acquire as big a share of the spoil as possible. If the morsel chanced to be the last obtainable when a prolonged fast was impending, a selfish and jealous child might, by securing a double portion, hold out while others perished. But it is plain that jealousy and selfishness were not invariably the qualities which were most helpful in the struggle for life during the primitive ages. Most babies, even before they can talk, will ostentatiously offer their nurses or parents a share of their food at the very time when they show the greatest repugnance to giving any to other children. Obviously the primitive child learned by sad experience that, in dealing with adults, a policy of conciliation and reciprocity paid better in the long run than one of brutal acquisitiveness. We see precisely the same motives prevalent to-day in political and commercial affairs.

In like manner one might take in order every trait, whether physical or moral, of early childhood, and show that each is at tributable, not to any such conditions of environment as exist in civilized countries, but to circumstances which are only found at present among the very lowest tribes of men. When we consider that man's moral nature has undergone no essential change during the thousands of years of the historic period, it becomes evident that an inconceivably prolonged epoch of savagery must have been requisite for the development of all these distinctively human characteristics in the first place. Moreover, since children are practically alike all the world over as regards their innate instincts and habits, it seems evident that these characteristics must have come into existence before the human species split into various races and spread over the surface of the globe. But when we are asked to measure this vast æon by years, the biologist is even more at sea than the student of geologic chronology.

Louis Robinson.